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ABSTRACT

A study was conducted to determine the relationship of curriculum, gender, and location of residence to career maturity of high school students. Two schools (one urban, one rural) in central Ohio provided 320 participating students. A stratified random sampling techique was then used to select equal numbers of 10th and 12th grade vocational-male, vocational-female, college preparatory-male, college preparatory-female students from each of the rural and urban schools. Data were collected in the classrooms using the Career Development Inventory (CDI) and a demographic data questionnaire. Grade point averages and test scores were provided by the schools. Among the findings were the following: (1) college preparatory students were higher in career maturity than vocational students at both the 10th- and 12th-grade levels; (2) female students were higher than male students in career maturity at both the 10th- and 12th-grade levels; (3) no significant difference in career maturity was found between rural and urban students; and (4) scholastic achievement was significantly related to career maturity. (34 references) (CML)

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Summary of
Research

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PREDICTORS OF STUDENTS' CAREER MATURITY IN CENTRAL OHIO HIGH SCHOOLS

Chyul-Young Jyung and Larry E. Miller

Teachers of agriculture have many opportunities for career guidance because they receive many requests for help from individuals in their communities. They also frequently have opportunities to contribute information valuable to other persons in the school who are providing guidance services because they visit the homes of students and because they work with their students intensively. Therefore, agricultural educators' attention to career guidance need to far exceed the attention given by teachers of other content areas, and teachers of agriculture are the key individuals in a school's career guidance program (Phipps, 1980).

The current emphasis on vocational agricultural education and career development theory has brought to light a common focus on the emerging readiness and competence of individuals to not only enter but find satisfaction in the world of work. Recent developmental theory of vocational behavior depicts the selection of an occupation as a process which covers a considerable number of years, ranging from late childhood into the early stages of adulthood. Interest in determining the maturity of individuals in the areas that are critical to realistic career decision-making developed as a result of this realization.

Reflecting this trend, career maturity has come to be used as a prerequisite to the ability to make a wise occupational choice. Moreover, as boys and girls progress through school and the educational level increases, the occupational implications of career decisions become clear. Therefore, educators ask questions such as: (1) When should instruction in the various vocational fields begin?; (2) When between courses should students be expected to choose leading to different types of education and thus to different fields of work and occupations?; (3) Is this student or group of students ready to make such a choice?; and (4) Does taking a certain course, studying a certain unit, engaging in a certain extracurricular activity, being enrolled in a work experience program, or being counseled by a professional counselor in any way affect the readiness of students to make these decisions? (Super, 1974).

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In many states, the policy for enrolling in a vocational program is that students can be enrolled in vocational education at the start of their junior year in high school. Further, the philosophy and goals of vocational education are to have students prepared to enter the world of work upon completing high school. The problem is: "Are students ready to make these career decisions at this point of their life?" In a monograph based on a thorough survey of the literature, Mitchell (1979) emphasized the need to be able to answer such questions. Other researchers in career education, career counseling, and career development (Hoyt, 1980; McCaslin, Gross and Walker, 1977) also reported the widespread need to address these concerns.

REVIEW OF LITERATURE

According to the literature (Achebe, 1982; Jordaan and Heyde, 1979; Khan and Alvi, 1983; McNair and Brown, 1983; Osipow, 1983; Thompson, Lindeman, Super, Jordaan, and Myers, 1981; Trebilco, 1984; Westbrook, Cutts, Madison, and Arcia, 1980), many variables are related to career maturity. They can be classified as: (1) biological variables (gender, race); (2) psychological variables (mental ability, self-concept, locus of control); (3) social variables (social economic status, location of residence); (4) educational variables (curriculum, grade, scholastic achievement, educational aspiration, career development program); and (5) vocational variables (work value, work salience, work experience, career decision, vocational aspiration, congruence, decision making style). Among these variables, some variables can be classified as main independent variables, and some variables can be classified as rival independent variables. That is, according to the literature, curriculum, gender, and location of residence are found to affect career maturity indirectly: the rival variables to curriculum are mental ability, scholastic achievement, social economic status, educational aspiration, and vocational aspiration (Esslinger, 1976; Fetters, 1975; Herr and Enderlein, 1976; Super and Overstreet, 1960); the rival variable to gender is scholastic achievement (Omvig, 1976; Omvig and Thomas, 1977; Thompson et al., 1981); and the rival variables to location are scholastic achievement, social economic status, educational aspiration, and vocational aspiration (Burchinal, 1961; Carmichael, 1982; Hanson, 1980).

Based on the literature, the theoretical framework can be depicted as shown on page 3.

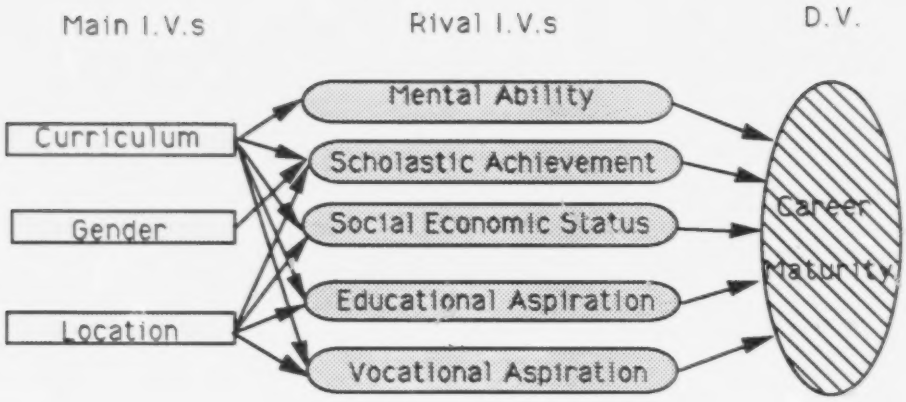
PURPOSE

The purpose of this study was to measure the career maturity of senior high school students, and to determine the relationship between selected variables and the career maturity. This study was specifically conducted to determine the relationship of curriculum, gender and location of residence to career maturity of senior high school students, and to determine the intervening variables moderating each of these three main independent variables.

RESEARCH QUESTIONS

The following research questions were developed to guide this study.

1. What is the level of career maturity of senior high school students?
2. What is the relationship between the main independent variables (curriculum, gender and location of residence) and career maturity in senior high school students?



3. What is the relationship between the rival independent variables (level of mental ability, scholastic achievement, social economic status, educational aspiration and vocational aspiration) and career maturity?
4. What is (are) the intervening variable(s) of each of the three main independent variables?
5. How much of the variance in career maturity is explained by each of the predictor variables?

METHODOLOGY

The relational research method was used for the study. The end sought by relational studies is to investigate relationships between variables in order to explain and predict (Miller, 1986, p.13).

Population and Sample

The target population in the study was all senior high schools of eight counties within a 50 miles radius of Columbus, Ohio, during 1988-89 school year. The total number of students in the population—a total of 80 senior high schools—in the eight counties was taken from the Ohio Educational Directory 1988-89 (N=32,069), with an accessible population of 983 students. Using the formula to determine a sample size with 95% confidence (Krejcie & Morgan, 1970), 278 students were needed. Considering the needed number, the number of sample was set at 320 students. A cluster sampling technique was used, where schools were the sampling units, and 1 urban school and 1 rural school were purposely selected as an accessible population. A stratified random sampling technique was then used to select equal numbers of 10th and 12th grade vocational-male, vocational-female, college preparatory-male, college preparatory-female students from each of the rural and urban schools.

Data Collection

In each of the urban and rural schools, two vocational tenth grade classes, two college preparatory tenth grade classes, two vocational twelfth grade classes, and two college preparatory twelfth grade classes were purposely selected. For each class, two envelopes were prepared: One for female students, and the other for male students. Each envelope contained ten original answer sheets and extra copies of the answer sheet. In each classroom, the ten original answer sheets and the extra copies were randomly handed to each of male and female students. The data were collected in April, 1989. Only the original answer sheets

were used for data analysis, but extras were supplied to meet the wishes of the schools to examine all students in the classes at the same time.

Instrument

The instrument used to measure career maturity was the Career Development Inventory (CDI) — School Form Part I (Thompson et al., 1981). Internal consistency reliability coefficients for the CDI range from .79 to .88 with a median of .86 (Thompson et al., 1981). Test-retest reliabilities from previous forms of the CDI suggest that the current version has sufficient stability over periods of up to six months (Thompson et al., 1981). Content validity has been demonstrated by the relationship between the CDI items and the theoretical components of vocational maturity that have been described by Super and his colleagues in the Career Pattern Study (Super, 1984; Thompson et al., 1981). Construct validity is evident from the connection between CDI scores and differences in grade, gender, and curriculum; with each of these variables, CDI scores correlated in a way that was consistent with career development theory. Furthermore, factor analyses of the CDI revealed a statistical structure that confirmed the existence of two identifiable factors of vocational maturity.

The subjects were administered this CDI-Part I instrument. The subjects were also administered a questionnaire as a means of obtaining demographic data such as curriculum, gender, grade, location of residence, educational aspiration, vocational aspiration, and parents' or guardians' occupation. Level of mental ability and grade point average scores were provided by school counselors.

Data Analysis

Data were analyzed using the SAS at the Instructional and Research Computing Center of The Ohio State University. Correlations, t-tests, two way analyses of variance, and multiple regression analyses were used to develop a further understanding of the relationship of curriculum, gender, and location to career maturity. An alpha level of .05 was established prior to data treatment.

FINDINGS

Large differences in the career maturity existed among the subgroups classified, based on curriculum, gender, and location. The means for affective, cognitive, and total career maturity of tenth grade students (90.34, 94.61 and 89.98 respectively), and cognitive career maturity of twelfth grade students (99.65) were under 100 which was the mean of the norm group of the instrument.

In order to examine the relationship among the main and rival independent variables, and dependent variables, correlations, t-tests, and two way analysis of variance were used. The magnitude of the relationships investigated in this study was described based on the scale delineated by Davis (1971).

A. Relationship between main independent variables and dependent variable

1. Both in the tenth and the twelfth grade, college preparatory students were significantly higher in affective, cognitive and total career maturity than vocational students. The relationship between curriculum and affective and total career maturity was

higher in the tenth grade (.79 and .75 respectively) than in the twelfth grade (.57 and .63 respectively). On the contrary, the relationship between curriculum and cognitive career maturity was higher in the twelfth grade (.52) than in the the tenth grade (.44). The difference in affective career maturity and total career maturity between college preparatory students and vocational students were significantly less in the twelfth graders than in the tenth graders.

2. Both in the tenth and the twelfth grade, female students were higher in affective, cognitive and total career maturity than male students, and almost all of the relationships were statistically significant. The relationship of gender to affective and total career maturity was higher in the twelfth grade (.20 and .32 respectively) than in the tenth grade (.13 and .31 respectively). On the contrary, the relationship between gender and cognitive career maturity was higher in the tenth grade (.42) than in the twelfth grade (.35). Gender was more highly correlated with the cognitive domain of career maturity than the affective domain of career maturity, and the relationship between gender and cognitive career maturity was higher in the tenth grade than in the twelfth grade.

3. Both in the tenth and twelfth grade, rural students were negligibly higher than urban students in career maturity and the relationship was not statistically significant. Also, no significant difference in affective, cognitive, and total career maturity mean scores between rural students and urban students was found.

B. Relationship between rival independent variables and dependent variable

1. Mental ability was moderately or substantially related to career maturity, and the relationship was statistically significant. Also, mental ability, which is assumed to be a measure of the cognitive domain, was more highly related to the cognitive domain of career maturity than the affective domain of career maturity. From the developmental point of view, mental ability was more highly related to career maturity in the tenth grade than in the twelfth grade.

2. Scholastic achievement was substantially or very highly related to career maturity, and the relationship was statistically significant. Also, scholastic achievement, which is assumed to be a measure of the cognitive domain, was more highly related to the cognitive domain of career maturity than the affective domain of career maturity.

3. Social economic status was low or moderately related to career maturity, and the most of the relationships were statistically significant. Also, social economic status was more highly related to the cognitive domain of career maturity than the affective domain of career maturity. As grades increased from the tenth to the twelfth, the strength of the relationship decreased. That is, from the developmental point of view, social economic status was more highly related to career maturity in the tenth grade than in the twelfth grade.

4. Educational aspiration was moderately related to career maturity, and

the relationships were statistically significant. Also, educational aspiration was more highly related to the affective domain of career maturity than the cognitive domain of career maturity. As grades increased from tenth to twelfth, the relationship decreased. That is, from the developmental point of view, educational aspiration was more highly related to career maturity in the tenth grade than in the twelfth grade.

5. Vocational aspiration was low or moderately related to career maturity, and the relationships were statistically significant. Also, vocational aspiration was more highly related to the cognitive domain of career maturity than the affective domain of career maturity. As grades increased from tenth to twelfth, the relationship increased. That is, from the developmental point of view, vocational aspiration was more highly related to career maturity in the twelfth grade than in the tenth grade.

C. Relationship between rival independent variables and main independent variables

1. Both in the tenth and the twelfth graders, substantial relationships existed between mental ability and curriculum (.50 and .58 respectively), and the relationships were statistically significant. A t-test showed that college preparatory students were significantly higher in mental ability than vocational students. Mental ability was more highly related to curriculum in the twelfth grade than in the tenth grade.

2. Both in the tenth and the twelfth graders, substantial relationships existed between scholastic achievement and curriculum (.51 and .59 respectively), and the relationships were statistically significant. A t-test showed that college preparatory students were significantly higher in scholastic achievement than vocational students. Scholastic achievement was more highly related to curriculum in the twelfth grade than in the tenth grade.

3. Both in the tenth and the twelfth graders, moderate relationships existed between social economic status and curriculum (.39 and .38 respectively), and the relationships were statistically significant. A t-test showed that college preparatory students were significantly higher in social economic status than vocational students. The relationship was almost the same in the tenth and the twelfth grade.

4. Both in the tenth and the twelfth graders, substantial relationships existed between educational aspiration and curriculum (.55 and .63 respectively), and the relationships were statistically significant. A t-test showed that college preparatory students were significantly higher in educational aspiration than vocational students. Educational aspiration was more highly related to curriculum in the twelfth grade than in the tenth grade.

5. In the tenth graders, a substantial relationship existed between vocational aspiration and curriculum (.51), and in twelfth graders, a very high relationship existed between vocational aspiration and curriculum (.71). Both of the relationships were statistically significant. A t-test

showed that college preparatory students were significantly higher in vocational aspiration than vocational students. Vocational aspiration was much more highly related to curriculum in the twelfth grade than in the tenth grade.

6. Both in the tenth and the twelfth graders, moderate relationships existed between scholastic achievement and gender (.44 and .42 respectively), and the relationships were statistically significant. A t-test showed that female students were significantly higher in scholastic achievement than male students. Scholastic achievement was more highly related to gender in the tenth grade than in the twelfth grade.

7. Both in the tenth and the twelfth graders, negligible relationships existed between scholastic achievement and location (-.01 and -.02 respectively), and the relationships were not statistically significant. That is, rural students were negligibly higher in scholastic achievement than urban students, and it was not significant. Scholastic achievement was more highly related in the negative direction to location in the twelfth grade than in the tenth grade.

8. Both in the tenth and the twelfth graders, negligible relationships existed between social economic status and location (.07 and .10 respectively), and the relationships were not statistically significant. That is, urban students were negligibly higher than rural students, and it was not significant. Social economic status was more highly related to location in the twelfth grade than in the tenth grade.

9. In the tenth graders, a negligible negative relationship existed between educational aspiration and location (-.08). On the contrary, in twelfth graders, a low positive relationship existed between educational aspiration and location (.11). That is, in the tenth graders, rural students were negligibly higher in educational aspiration than urban students, and in the twelfth graders, urban students were higher in educational aspiration than rural students. Both of the relationships were not statistically significant.

10. In the tenth graders, a negligible negative relationship existed between vocational aspiration and location (-.06). On the contrary, in twelfth graders, a low positive relationship existed between vocational aspiration and location (.13). That is, in the tenth graders, rural students were negligibly higher in vocational aspiration than urban students, and in the twelfth graders, urban students were higher in vocational aspiration than rural students. Both of the relationships were not statistically significant.

D. Relationship between main independent variables and dependent variables while holding rival independent variables constant

1. Both in the tenth and the twelfth graders, when mental ability, scholastic achievement, social economic status, educational aspiration, and vocational aspiration were statistically controlled, no significant relationship existed between curriculum and cognitive career maturity (See Tables 1 & 2).

Table 1

Regression of Cognitive Career Maturity on Rival Independent Variables (Mental Ability, Scholastic Achievement, Social Economic Status, Educational Aspiration and Vocational Aspiration) and Main Independent Variable (Curriculum) in 10th Graders (n=160) (Hierarchical Entry)

Variables	R^2	R^2_{change}	b	Beta	t
Set of Rival Independent Variables		.641	.641		
o Mental Ability			.424	.259	4.26*
o Scholastic Achievement			14.549	.631	10.37*
o Social Economic Status			.031	.032	.59
o Educational Aspiration			1.744	.124	1.95
o Vocational Aspiration			-.020	-.026	-.42
Main Independent Variable	.644	.003			
o Curriculum[a]			-2.816	-.083	-1.21
(Constant)			33.771		

*p<.05
Adjusted R^2=.630
For Model: F=46.13; p<.0001
a: 0=Vocational; 1=College Preparatory

Table 2

Regression of Cognitive Career Maturity on Rival Independent Variables (Mental Ability, Scholastic Achievement, Social Economic Status, Educational Aspiration and Vocational Aspiration) and Main Independent Variable (Curriculum) in 12th Graders (n=160) (Hierarchical Entry)

Variables	R^2	R^2_{change}	b	Beta	t
Set of Rival Independent Variables		.528	.528		
o Mental Ability			.463	.260	3.60*
o Scholastic Achievement			11.241	.493	6.87*
o Social Economic Status			.075	.087	1.41
o Educational Aspiration			-.342	-.024	-.32
o Vocational Aspiration			.006	.008	.09
Main Independent Variable	.529	.001			
o Curriculum[a]			1.898	.056	.60
(Constant)			45.002		

*p<.05
Adjusted R^2=.511
For Model: F=28.65; p<.0001
a: 0=Vocational; 1=College Preparatory

2. Both in the tenth and the twelfth graders, when scholastic achievement was statistically controlled, no significant relationship existed between gender and affective, cognitive, and total career maturity without exception (See Tables 3 & 4).

3. Both in the tenth and the twelfth graders, no significant relationship existed between location, and affective, cognitive, and total career maturity. That is, the assumption for the hypothesis—Significant relationship will exist between location,

Table 3

Regression of Total Career Maturity on Rival Independent Variable (Scholastic Achievement) and Main Independent Variable (Gender) in 10th Graders (n=160) (Hierarchical Entry)

Variables	R^2	R^2_{change}	b	Beta	t
Rival Independent Variable	.554	.554			
o Scholastic Achievement			21.427	.756	12.72*
Main Independent Variable	.555	.001			
o Gender[a]			-1.047	-.025	-.42
(Constant)			39.519		

*p<.05
Adjusted R^2=.549
For Model: F=97.90; p<.0001
a: 0=Male; 1=Female

Table 4

Regression of Total Career Maturity on Rival Independent Variable (Scholastic Achievement) and Main Independent Variable (Gender) in 12th Graders (n=160) (Hierarchical Entry)

Variables	R^2	R^2_{change}	b	Beta	t
Rival Independent Variable	.559	.559			
o Scholastic Achievement			19.322	.748	12.78*
Main Independent Variable	.559	.000			
o Gender[a]			-.022	-.001	-.01
(Constant)			61.870		

*p<.05
Adjusted R^2=.553
For Model: F=99.40; p<.0001
a: 0=Male; 1=Female

and affective, cognitive, and total career maturity—was not true. Therefore, no further regressions analysis to test the hypothsis—If scholastic achievement, social economic status, educational aspiration, and vocational aspiration are statistically controlled, no relationship will exist between location and career maturity—were conducted.

E. Relationship between independent variables and dependent variable

1. In the tenth grade, the variance of the affective, cognitive, and total career maturity explained by the linear combination of curriculum, gender, location, mental ability, scholastic achievement, social economic status, educational aspiration and vocational aspiration were 67.7%, 68.1%, and 78.0%, and which were statistically significant. In the twelfth grade, the variance of the affective, cognitive, and total career maturity explained by the linear combination of curriculum, gender, location, mental ability, scholastic achievement, social economic status, educational aspiration and vocational aspiration were 46.6%, 56.0%, and 63.9%, and which were statistically significant.

2. When the dependent variable was affective career maturity, in the tenth grade, curriculum, and vocational aspiration, and, in the twelfth grade, curriculum and scholastic achievement contributed significantly to the regression when the other independent variables were controlled. When the dependent variable was cognitive career maturity; in both tenth grade and twelfth grade, gender, mental ability and scholastic achievement contributed significantly to the regression when the other independent variables were controlled. When the dependent variable was total career maturity; in the tenth grade, curriculum, gender, mental ability, scholastic achievement and vocational aspiration, and, in the twelfth grade, curriculum, gender, mental ability and scholastic achievement contributed significantly to the regression when the other independent variables were controlled.

SUMMARY, DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

Large differences in the career maturity existed among the subgroups classified based on curriculum, gender, and location. The means for affective, cognitive, and total career maturity of tenth grade students, and cognitive career maturity of twelfth grade students were under 100 which was the mean of the norm group of the instrument.

Two of the three main independent variables—curriculum and gender—were significantly related to career maturity, and all of the rival independent variables—mental ability, scholastic achievement, social economic status, educational aspiration, and vocational aspiration—were significantly related to career maturity. Significant relationships existed between curriculum and rival independent variables—mental ability, scholastic achievement, social economic status, educational aspiration, and vocational aspiration. When the rival independent variables were controlled, no significant relationship existed between curriculum and career maturity.

Also, significant relationships existed between gender and a rival independent variable—scholastic achievement. When the rival independent variable was controlled, no significant relationship existed between gender and career maturity.

In this study, based on the findings that urban students were higher in scholastic achievement, social economic status, educational aspiration, and vocational aspiration (Burchinal, 1961; Hanson 1980; Carmichael, 1982), hypothesis was established as follows: Urban students will be higher in career maturity than rural students. However, the result showed that rural students were negligibly higher in career maturity than urban students. The result was in accordance with the studies of Super and Overstreet (1960), Dillard (1976), and Holla. d (1981). There are three possible reasons why, in this study, urban students were not higher in career maturity than rural student. First, urban students might be lower in career maturity than rural students because of the ethnicity of students included in the sample of urban students. In this study, the selected urban school had 10% black students of the total enrolling students, whereas, the selected rural school had no black students. That is, there were some black students in the sample of the urbar school used in this study, and, on the contrary, there was no black student in the sample of the rural school. Most researchers (Karayanni, 1981; Lawrence and Brown, 1976; McNair and Brown, 1983) agreed that whites are higher in career maturity than blacks. Second, the village where the rural school was located, had a very peculiar characteristic compared to other rural areas: A large auto plant was located there, and new large plants were being establishing there. Third, rural students were higher than urban students in career maturity possibly because the rural students had work experience on farms and were likely to follow family farming patterns which were already clear to them (Osipow, 1983).

Implications

1. A significant difference in the rate of career development existed among the subgroups based on curriculum and gender. Also, career maturity varied depending on each student's characteristics such as mental ability, scholastic achievement, social economic status, educational aspiration, and vocational aspiration. The means for affective, cognitive, and total career maturity of tenth grade students (90.34, 94.61, and 89.98, respectively) were under 100 which was the mean of the norm group of the instrument. Many students were vocationally immature at the completion of tenth grade when they were encouraged to decide their curriculum. In accordance with this finding, in 1983, when asked how certain students were about their occupational preferences, 27 percent of the eleventh grade students answered, "I am not sure at all" (Herr and Crammer, 1988, p. 269). In short, at the completion of tenth grade when many students are too immature to decide career choices, students are forced to finalize their curricular choice. Therefore, educational administrators and teachers are recommended to provide support for facilitating students' career maturity so that as students approach the end of the tenth grade they should have reached a stage of career development where they can make curricular choice wisely. Clearly, it would be an advantage if the first year of high school could be an exploratory period, when students were able to sample

and react to a variety of courses in the manner once envisaged for junior high schools. If this is not feasible, school policies should be flexible enough to facilitate student transfer from one curricular track to another with as little penalty as possible. That is, more avenues must be created for all students to move freely among the curricula with the criteria for such movement being individual need, readiness, interest, motivation, and the blend of academic and vocational experiences to meet these criteria.

2. Female students were significantly higher in career maturity than male students. This finding is apparently a manifestation of girls maturing earlier than boys and needing specialized guidance and counseling about their plans and goals in the high school. Like gender difference in career maturity, college preparatory students were significantly higher in career maturity than vocational students. Therefore, present career development practices need to be revised to reflect the experiences of the particular subgroup. Also, when predicting career maturity, different predictors may be employed depending on the subgroup of the subjects.

3. Gender difference and curriculum difference in career maturity were a function of intervening variables: the gender difference was a function of scholastic achievement; and the curriculum difference was a function of mental ability, scholastic achievement, social economic status, vocational aspiration and educational aspiration. Therefore, career guidance and counseling based solely on gender or curriculum is not appropriate. Teachers and school counselors need to help students utilize multiple sources of information about themselves (interests, abilities, career maturity, values) and consider a variety of career options when making educational and career decisions.

4. Individuals who had higher level of mental ability, scholastic achievement and social economic status, and who set higher educational and vocational aspirations exhibited greater career maturity. In other words, career maturity was related to biological, social, psychological, educational and vocational variables. That is, this study, like many others, pointed to the fact that career maturity should be viewed as a function of total human development. An important implication of this finding is that any program designed to facilitate career development must be conceived as part of a total educational experience aimed at developing a positive self-concept, higher level of mental ability and scholastic achievement, realistic levels of educational aspiration and vocational aspiration, an understanding of one's strengths and weaknesses, skills in decision making and problem solving, and appreciations of appropriate work values. Therefore, as proponents of the career education movement would say, career education must not be simply considered an extra course in the curriculum but an instructional strategy that relates established subject matter to career concepts, and career education activities must be integrated into the total school curriculum in order to be optimally effective in terms of achieving the outcomes listed.

Recommendations for Further Study

1. The data utilized in this study were obtained from urban and rural tenth- and twelfth-grade students. The criteria used to identify urban and rural schools and the size of the sample used in this study were identified as limitations. The generalization of the results was limited on that basis to tenth- and twelfth-grade students in the two schools studied. In addition, subjects for the study were obtained from available intact groups since random sampling procedures were not feasibly applied to the available populations. Therefore, for greater generalizability, replication is needed.

2. In this study, statistically significant differences in career maturity as well as scholastic achievement, social economic status, educational aspiration, and vocational aspiration were not found between the urban school and the rural school. One possible reason for the finding may be due to the definition of urban and rural schools used in this study. Urban and rural schools have been defined in many different and diverse ways (i.e., McCracken and Miller, 1988; U.S. Bureau of the Census, 1983). Therefore, additional attempts should be made in defining the nature of urban and rural schools. Based on the classification, the State Department of Education should identify schools as urban, suburban, or rural, and keep records according to this classification so that researchers can study using this unified classification.

3. Because of the inherent difficulties of the longitudinal method—demanding an extended commitment from an individual or institution willing to spend time, money, and other resources for several years before completing the project —the cross-sectional method was used in this study. Since career maturity was stemmed from developmental concepts developed by Super, what students are like at various ages, how they vary from one another within age levels, and how they grow and develop are very important questions in the study of career maturity. To answer these questions effectively, the longitudinal method is the most suited.

4. Especially, this study was conducted to determine the relationship of curriculum, gender, and location to career maturity of senior high school students, and to determine the intervening variables of each of these three variables. Thus, this study was successful in determining the intervening variables of each of the three main independent variables. However, this study did not determine the causal relationships among the rival variables. Therefore, further researches to determine the causal relationships among the rival variables are needed.

5. The result showed that rural students were negligibly higher than urban student, and the relationship was not statistically significant. One possible reason for the non-significance is that urban students might be lower than rural students because of the ethnicity included in the sample of urban students. That is, there were some black students in the sample of the urban school used in this study, and, on the contrary, there was no black student in the sample of

the rural school. Therefore, other variables including race should be included in future studies.

6. This study was relational in nature. A relational study cannot establish cause-and-effect relationships between variables; the investigator sought only to describe and explain relationships between characteristics (Miller, 1986). To overcome the shortcoming, a causal approach is needed. Analysis of covariance structure is a combination of factor analysis and multiple regression analysis. Kerlinger (1986) stated that analysis of covariance structure is the most suited to the study and analysis of complex structural theoretical models in which complex chains of reasoning are used to tie theory to empirical research, and under certain conditions and limitations, the approach is a powerful means of testing alternative explanations of behavior phenomena. Therefore, the covariance structure modeling is needed in the future study of career maturity.

REFERENCES

Achebe, C. (1982). Assessing the vocational maturity of students in the east central state of Nigeria. *Journal of Vocational Behavior, 20,* 153-161.

Burchinal, L.G. (1961). Differences in educational and occupational aspirations of farm, small town and city boys. *Rural Sociology, 26,* 107-121.

Carmichael, D. (1982). The challenge of rural education. *The Rural Educator, 4,* 5-10.

Davis, J.A. (1971). *Elementary survey analysis.* Englewood, New Jersey: Prentice-Hall.

Dillard, J. M. (1976). Relationship between career maturity and self-concept of suburban and urban middle- and urban lower-class preadolescent black males. *Journal of Vocational Behavior, 9,* 311-320.

Esslinger, C.W. (1976). Educational and occupational aspirations and expectaions and the educational, personal, and family characteristics of selected twelfth grade female students. *Dissertation Abstracts International, 37,* 255A.

Fetters, W. B. (1975). *National longitudinal study of the high school class of 1972: Student questionnaire and test results by high school program, ethnic category, and father's education.* Washington, D. C.: U.S. Government Printing Office.

Hanson, J.T. (1980). *Vocational education in a rural setting.* Paper presented at the Annual Kansas State University Rural and Small School Conference. Manhattan, Kansas. (ERIC Document Reproduction Service No. ED 198 176).

Herr, E.L., & Cramer, S.H. (1988). *Career guidance and counseling through the life span* (3rd Ed.). Boston: Little, Brown & Company.

Herr, E.L., & Enderlein, T.E. (1976). Vocational maturity: The effects of school, grade, curriculum and sex. *Journal of Vocational Behavior, 8,* 227-238.

Holland, M. (1981). Relationships between vocational development and self-concept in sixth grade students. *Journal of Vocational Behavior, 18*, 228-236.

Hoyt, K.B. (1980). *Evaluation of K-12 career education: A status report.* Washington, D.C.: U.S. Government Printing Office.

Jordaan, J.P., & Heyde, M. (1979). *Vocational maturity during the high school years.* New York: Teachers College Press.

Karayanni, M. (1981). Career maturity of emotionally maladjusted high school students. *Vocational Guidance Quarterly, 29*, 213-220.

Kerlinger, F.N. (1986). *Foundations of behavioral research* (3rd Ed.). New York: Holt, Rinehart and Winston.

Khan, S.B., & Alvi, S.A. (1983). Educational, social, and psychological correlates of vocational maturity. *Journal of Vocational Behavior, 22*, 357-364.

Krejcie, R. V., & Morgan D. W. (1970). Determining sample site for research activities. *Educational Psychology Measurement, 30*, 607-610.

Lawrence, W., & Brown, D. (1976). An investigation of intelligence, self-concept, socioeconomic status, race, and sex as predictors of career maturity. *Journal of Vocational Behavior, 9*, 45-52.

McCracken, J.D., & Miller, C. (1988). Rural teachers' perceptions of their schools and communities. *Research in Rural Education, 5*, 23-26.

McCaslin, N.L., Gross, C.J., & Walker, J.P. (1977). *Career education measures.* Columbus, Ohio: Center for Vocational Education, The Ohio State University.

McNair, D., & Brown, D. (1983). Predicting the occupational aspirations, occupational expectations, and career maturity of black and white male and female 10th graders. *Vocational Guidance Quarterly, 32*, 29-36.

Miller, L.E. (1986). *Lecture note of Ag. Ed. 885 Research Methods.* Columbus, Ohio: The Ohio State University.

Mitchell, A.M. (1979). *Evaluating career education.* Salt Lake City, Utah: Olympus.

Omvig, C.P. (1976). *Effects of a program of career education in Kentucky's education region XII: Phase two.* Frankfort, Kentucky: State Department of Education, Bureau of Vocational Education. (ERIC Document Reproduction Service No. CE 003-037).

Omvig, C.P., & Thomas, E.D. (1977). Relationship between career, education, sex, and career maturity of sixth and eighth grade pupils. *Journal of Vocational Behavior, 11*, 322-331.

Osipow, S.H. (1983). *Theories of career development* (3rd Ed.). Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

Phipps, L.J. (1980). *Handbook on agricultural education in public schools* (4th Ed.). Danville, Illinois: Interstate Printers & Publishers.

Super, D.E. (1974). *Measuring vocational maturity for counseling and evaluation.* Washington, D.C.: National Vocational Guidance Association.

Super, D.E. (1984). Work role salience as a determinent of career maturity in high school students. *Journal of Vocational Behavior, 25,* 30-44.

Super, D.E., & Overstreet, P.L. (1960). *The vocational maturity of ninth-grade boys.* New York: Teachers College, Columbia University.

Thompson, A.S., Lindeman, R.H., Super, D.E., Jordaan, J.P., & Myers, R.A. (1981). *Career Development Inventory Volume 1: User's Manual.* Palo Alto, California: Consulting Psychologists Press.

Trebilco, G.R. (1984). Career education and career maturity. *Journal of Vocational Behavior, 25,* 191-202.

U.S.Bureau of the Census. (1983). *Census of population: 1980, Vol. 1. Characteristic of the population.* Washington, D.C.: U.S. Government Printing Office.

Westbrook, B.W., Cutts, C.C., Madison, S.S., & Arcia, M.A. (1980). The validity of the Crites model of career maturity. *Journal of Vocational Behavior, 16,* 249-281.

SUMMARY OF RESEARCH SERIES

Teachers of agriculture have many opportunities for career guidance because they receive many requests for help from individuals in their community. The current emphasis on vocational agriculture and career development theory has brought to light a common focus on the emerging readiness and competence of individuals to not enter, but find satisfaction in the world of work. This study reports research conducted in Ohio that examines the relationship of curriculum, gender, and location of residence to career maturity of senior high school students. It should be of interest to vocational education teachers, guidance counselors, and school administrators.

This summary is based on a dissertation by Chyul-Young Jyung under the direction of Larry E. Miller. Chyul-Young Jyung was a graduate student in the Comprehensive Vocational Education Program, The Ohio State University. He is currently a Visiting Scholar for the Department of Agricultural Education. Dr. Larry E. Miller is a Professor, Department of Agricultural Education, The Ohio State University. Special appreciation is due to William H. Hamilton, Purdue University; and Oren L. Christmas, Michigan State Department of Education; for their critical review of this manuscript prior to its publication.

Research has been an important function of the Department of Agricultural Education since it was established in 1917. Research conducted by the Department has generally been in the form of graduate theses, staff studies, and funded research. It is the purpose of this series to make useful knowledge from such research available to practitioners in the profession. Individuals desiring additional information on this topic should examine the references cited.

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